8.0 AOC 10/11 - BLACKTOP TRAINING AREA AND FENCED YARD IN BLACKTOP AREA

8.1 LOCATION OF STUDY AREA

The Blacktop Training Area/Fenced Yard in Blacktop Area comprises approximately two acres (fenced yard is approximately .09 acres) within the Cantonment Area at the Fort McClellan, Alabama Army Installation (Fig. 1). The study area boundary was devised by adding a 50-ft buffer outside of the Blacktop Training Area site boundary.

8.2 AERIAL PHOTOGRAPH QUALITY ISSUES

A few photograph quality issues were encountered during photograph interpretation. They were corrected as follows:

- **Quality -** In many areas of the photographs, the dynamic range of brightness values was insufficient to distinguish land cover classes. Due to extreme brightness (almost white), ground cover such as grass, bare soil, and paved areas could not be differentiated. At other locations, extremely dark (nearly black) areas made it difficult to delineate grass from forested areas. Where appropriate, the problem areas of the photographs were subset and image enhancement techniques were applied. Simple adjustments to the brightness and contrast were conducted, or in more severe cases, a histogram equalization in the range of the lookup table was performed on the specific area where interpretation was difficult.
- Rectification Although second and third order transformations were used in the rectification of the digital photograph, in some photographs there was too much error in the rectification of the Blacktop Training Area site to accurately digitize land use/cover polygons. Factors contributing to these errors included: (1) insufficient ground control points (GCPs) in specific area due to pronounced changes in land cover between years, (2) photographic distortion (location of site in relation to center of photograph and angle of camera/aircraft when photograph was acquired), and (3) terrain distortion (a single photograph may cover large area of varying elevations even though the site being studied may have little relief). To improve the registration of the study area, the Blacktop Training Area/Fenced Yard in Blacktop Area site was subset from the digital photograph and the newly created image file was rectified separately.

8.3 FINDINGS

Complete photographic coverage of the study area was available for eight years of photographic coverage from 1937 to 1994. A total of 89 anomalies were identified in the year-by-year land cover analysis (Fig. 2). All anomalies were inspected to ascertain the cause of each anomaly. Anomalies for which the cause could not be determined, as well as anomalies potentially associated with waste disposal or chemical training activities, were determined to be of potential concern and should be assessed by the USAESCH. Of the 89 anomalies identified, 57 were the result of new roads and buildings and pre-existing (or former) roads, trails, paved areas, structures, and unidentified objects. The remaining 32 anomalies were the result of temporary trails, the clearing of trees and/or groundcover, and unidentified objects. These anomalies are considered to be of potential concern.

- **1937.** One anomalous area was identified in the 1937 photograph (see Table 1 and Fig. 3a). This anomaly was a pre-existing trail and is of potential concern.
- **1937 to 1940.** Four anomalies were identified during the land cover change analysis for the years 1937 and 1940 (see Table 1 and Fig. 3b). One anomaly was the result of a pre-existing trail. The remaining three anomalies are of potential concern. The anomalies of potential concern are a result of new trails (2 anomalies) and the clearing of trees (1 anomaly).
- **1940 to 1944.** Thirty-three anomalies were identified during the land cover change analysis for the years 1940 and 1944 (see Table 1 and Fig. 3c). Eight anomalies were the result of a new building, new roads, and former trails. The remaining twenty-five anomalies are of potential concern and were the result of piles/stacks of unknown material (18 anomalies) and the clearing of trees (7 anomalies).
- **1944 to 1954.** Sixteen anomalies were identified during the land cover change analysis for the years 1944 and 1954 (see Table 1 and Fig. 3d). Fifteen of the anomalies were the result of former piles/stacks of unknown materials. The remaining anomaly is of potential concern and was the result of an unidentified object (1 anomaly).
- **1954 to 1961.** Ten anomalies were identified during the land cover change analysis for the years 1954 and 1961 (see Table 1 and Fig. 3e). Nine anomalies were the result of new roads and structures, pre-existing roads and unidentified objects, and a former cleared area. The remaining anomaly is of potential concern and was the result of the clearing of trees (1 anomaly).
- **1961 to 1969.** Eight anomalies were identified during the land cover change analysis for the years 1961 and 1969 (see Table 1 and Fig. 3f). All eight anomalies were caused by pre-existing and former roads, trails, structures, paved areas, and a new structure. There are no anomalies of potential concern.
- **1969 to 1982.** Seven anomalies were identified during the land cover change analysis for the years 1969 and 1982 (see Table 1 and Fig. 3g). All seven anomalies were caused by pre-existing and former roads, trails, structures, paved areas, a new structure, and landscaping. There are no anomalies of potential concern.
- **1982 to 1994.** Ten anomalies were identified during the land cover change analysis for the years 1982 and 1994 (see Table 1 and Fig. 3h). Nine of the anomalies were caused by pre-existing and former roads, structures, landscaping, and paved areas. The remaining anomaly is of potential concern and was the result of an unidentified object within the fenced area (1 anomaly).

Figure 1

Figure 2

Table 1. Blacktop Training Area - Anomaly Resolution

Of Potential Concern?	Anomaly #	Year of Change	Discussion Discussion	Related Anomalies ¹
Yes	1	1937	Pre-existing trail	4, 21, 23, 25, 34,
103		1737	The existing train	37
Yes	2	1940	Trees cleared	6, 7, 40
Yes	3	1940	Trail	19, 21, 49
	4	1940	Pre-existing trail (first visible 1937)	1, 21, 23, 25, 34, 37
Yes	5	1940	Trail	20, 28, 31, 32, 48
	6	1944	Building	2, 7, 40
	7	1944	Building	2, 6, 40
Yes	8	1944	Trees cleared	14, 27-29, 38
	9	1944	Road	9, 13, 41, 43, 44
Yes	10	1944	Piles/stacks of unknown materials	15, 52
Yes	11	1944	Piles/stacks of unknown materials	16, 51
Yes	12	1944	Piles/stacks of unknown materials	17, 50
	13	1944	Road	9, 41, 43-45
Yes	14	1944	Trees cleared	8, 27-29, 38
Yes	15	1944	Piles/stacks of unknown materials	10, 52
Yes	16	1944	Piles/stacks of unknown materials	11, 51
Yes	17	1944	Piles/stacks of unknown materials	12, 50
Yes	18	1944	Piles/stacks of unknown materials	18-20, 49
Yes	19	1944	Piles/stacks of unknown materials (placed on top of a former trail – first visible 1940)	3, 18, 49
Yes	20	1944	Piles/stacks of unknown materials (placed on top of a former trail – first visible 1940)	5, 18, 19, 49
	21	1944	Former trail (partially visible 1937/partially visible 1940)	1, 3, 4, 19, 23, 25, 34, 37
Yes	22	1944	Piles/stacks of unknown materials	23, 24, 53, 54
Yes	23	1944	Piles/stacks of unknown materials (placed on top of a former trail – first visible 1937)	1, 4, 21, 23-25, 34, 37, 53, 54
Yes	24	1944	Piles/stacks of unknown materials	22, 23, 53, 54
	25	1944	Former trail (first visible 1937)	1, 4, 21, 23, 34, 37
Yes	26	1944	Trees cleared	None
Yes	27	1944	Trees cleared	8, 14, 28, 29, 38

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies ¹
	20	1944	Trans along d (1040 tool) a cool droom b this	5 0 14 27 20
Yes	28		Trees cleared (1940 trail passed through this area)	5, 8, 14, 27, 29, 38
Yes	29	1944	Trees cleared	8, 14, 27, 28, 38
Yes	30	1944	Piles/stacks of unknown materials	31, 33-35, 47, 48
Yes	31	1944	Piles/stacks of unknown materials (placed on top of a former trail – first visible 1940)	5, 30, 33-35, 47, 48
	32	1944	Former trail (first visible 1940)	5, 39
Yes	33	1944	Piles/stacks of unknown materials	30, 31, 34, 35, 39, 47, 48
Yes	34	1944	Piles/stacks of unknown materials (placed on top of a former trail – first visible 1937)	1, 4, 21, 23, 25, 30-35, 37, 39, 47, 48
Yes	35	1944	Piles/stacks of unknown materials	30-34, 39, 47, 48
Yes	36	1944	Piles/stacks of unknown materials	39, 46
	37	1944	Former trail (first visible 1937)	1, 4, 21, 23, 25, 34
Yes	38	1944	Trees cleared	8, 14, 27, 28, 29, 38
	39	1954	Cleared area (former grass 1944; forest 1940, 1937) (not identified as an anomaly of potential concern because the entire area was of potential concern from 1944 anomalies).	All pre-existing anomalies were cleared.
	40	1954	Former building (first visible 1944)	2, 6, 7
	41	1954	Former road (first visible in 1944)	9, 13, 43, 44
Yes	42	1954	Unidentified object	59
	43	1954	Former road (first visible 1944)	9, 13, 41, 44
	44	1954	Former road (first visible 1944)	9, 13, 41, 43
	45	1954	Pre-existing road (first visible 1944)	13, 63, 69, 70
	46	1954	Former pile (first visible 1944)	36
	47	1954	Former pile (first visible 1944)	30, 31, 33, 34, 35, 48
	48	1954	Former pile (first visible 1944)	30, 31, 33, 34, 35, 47
	49	1954	Former pile (first visible 1944)	3, 18, 19, 20
	50	1954	Former pile (first visible 1944)	12, 17
	51	1954	Former pile (first visible 1944)	11, 16
	52	1954	Former pile (first visible 1944)	10, 15
	53	1954	Former pile (first visible 1944)	22-24, 54

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies ¹
	54	1954	Former pile (first visible 1944)	22-24, 53
	55	1961	Road	65, 73, 82
	56	1961	Former cleared/bare area; overgrown	39
	57	1961	Paved area	58, 59, 61, 62, 68, 76, 84
	58	1961	Paved area	57, 59, 61, 62, 68, 76, 84
	59	1961	Newly paved area (former unidentified object – first visible 1954)	42, 57, 58, 61, 62, 68, 76, 84
Yes	60	1961	Trees cleared	None
	61	1961	Paved area	57-59, 62, 66, 68, 76, 83, 84
	62	1961	Paved area	57-59, 61, 68, 76, 84
	63	1961	Pre-existing road (first visible 1944)	13, 45, 63, 69, 70
	64	1961	Structure (believed to be bleachers)	71, 72, 78, 88
	65	1969	Pre-existing road (first visible 1961)	55, 73, 82
	66	1969	Former paved (first visible 1961)	61
	67	1969	Structure (believed to be bleachers)	67, 75, 81
	68	1969	Pre-existing paved area (first visible 1961)	57-59, 61, 62, 74, 76, 83, 84
	69	1969	Former road (first visible 1944)	13, 45, 63, 69, 70
	70	1969	Former road (first visible 1944)	13, 45, 63, 69, 70
	71	1969	Former structure/bleachers (first visible 1961)	64, 72, 78, 88
	72	1969	Pre-existing structure/bleachers (first visible 1961)	64, 71, 78, 88
	73	1982	Pre-existing road (first visible 1961)	55, 65, 82
	74	1982	Landscaping (former paved area – first visible 1961)	68, 80
	75	1982	Pre-existing structure/bleachers (first visible 1969)	67, 81
	76	1982	Pre-existing paved area (first visible 1961)	57-59, 61, 62, 68, 84, 86, 89
	77	1982	Structure (believed to be fence)	87
	78	1982	Pre-existing structure/bleachers (first visible 1961)	64, 71, 72, 88
	79	1982	Former paved area (first visible 1961)	None
	80	1994	Pre-existing landscaped area (first visible 1982)	74

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies ¹
	81	1994	Pre-existing structure/bleachers (first visible 1969)	67, 75
	82	1994	Pre-existing road (first visible 1961)	55, 65, 73
	83	1994	Former paved (first visible 1961)	61, 68
	84	1994	Pre-existing paved area (first visible 1961)	57-59, 61, 62, 68, 76
Yes	85	1994	Unidentified object within fenced area	
	86	1994	Pre-existing paved area (first visible 1961)	76
	87	1994	Pre-existing structure/fence (first visible 1982)	77
	88	1994	Pre-existing structure/bleachers (first visible 1961)	64, 71, 72, 78
	89	1994	Former paved area (first visible 1961)	76

¹ Related anomalies refer to anomalies which are carried forward from year to year (e.g., a trail) or anomalies which change (e.g., the extension or widening of a trail or cleared area).

8.4 ANOMALIES OF POTENTIAL CONCERN

Eighty-nine anomalies were identified during the photographic interpretation the Blacktop Training Area. All anomalies have been investigated; thirty-two anomalies are considered to be of potential concern. To facilitate anomaly tracking, the anomalies of potential concern were mapped using the anomaly tracking number assigned in the year-by-year analysis (see Table 2 and Fig. 4). Table 2 provides information for each anomaly of potential concern, including the anomaly tracking number, the coordinates for the approximate center of the anomaly (coordinates provided in Alabama State Plane East, North American Datum [NAD] 83), the year the change occurred, and the reason for the anomaly.

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Table 2. Blacktop Training Area - Anomalies of Concern

Anomaly # Alabama State Plane Coordinate (approximate anomaly center)		Plane Coordinates	Year of Change	Discussion
	X-Coordinate	Y-Coordinate	Change	
1	669063.97304	1165907.45240	1937	The 1937 photographs show a pre-existing trail in this area. The trail is evident in the 1940 photographs. In 1944, most of the Blacktop Training Area was cleared, including this trail. By 1954, most of the study area was cleared again.
2	669063.97304	1166229.24207	1940	Trees were cleared in this area between 1937 and 1940. The 1944 photographs show a building located within this area. By 1954, most of the study area was cleared, including the 1944 building.
3	669079.29635	1165945.24992	1940	A new trail is evident in the 1940 photographs. The trail appears to be an extension of the 1937 trail discussed as anomaly of potential concern 1. In 1944, most of the Blacktop Training Area was cleared, including this trail. Piles of unknown objects are evident in the southern portion of this area in 1944. By 1954, most of the study area was cleared again.
5	669079.29635	1165896.21530	1940	A new trail is evident in the 1940 photographs. In 1944, most of the Blacktop Training Area was cleared, including this trail. Piles of unknown objects are evident in portions of this area in 1944. By 1954, most of the study area was cleared again.
8	669043.54195	1165997.34920	1944	Most of the study area was cleared of trees prior to the acquisition of the 1944 photographs. This cleared area was used in 1944 for the storage of unknown materials. By 1954, most of the study area was cleared of materials and vegetation.
10	668964.88225	1166150.58237	1944	Piles/stacks of unknown materials were evident in the 1944 photographs. Photograph quality and resolution made identification of the materials impossible. By 1954, most of the study area was cleared of materials and vegetation.
11	668948.53738	1166097.46154	1944	Piles/stacks of unknown materials were evident in the 1944 photographs. Photograph quality and resolution made identification of the materials impossible. By 1954, most of the study area was cleared of materials and vegetation.
12	668943.42961	1166051.49159	1944	Piles/stacks of unknown materials were evident in the 1944 photographs. Photograph quality and resolution made identification of the materials impossible. By 1954, most of the study area was cleared of materials and vegetation.
14	668889.28722	1166003.47853	1944	Most of the study area was cleared of trees prior to the acquisition of the 1944 photographs. By 1954, most of the study area was cleared of materials and vegetation.
15	669036.39107	1166132.19439	1944	Piles/stacks of unknown materials were evident in the 1944 photographs. Photograph quality and resolution made identification of the materials impossible. By 1954, most of the study area was cleared of materials and vegetation.
16	669019.02464	1166079.07356	1944	Piles/stacks of unknown materials were evident in the 1944 photographs. Photograph quality and resolution made identification of the materials impossible. By 1954, most of the study area was cleared of materials and vegetation.

Anomaly #	(approximate anomaly center)		Year of Change	Discussion
	X-Coordinate	Y-Coordinate		
17	668978.16246	1166037.18982	1944	Piles/stacks of unknown materials were evident in the 1944 photographs. Photograph quality and resolution made identification of the materials impossible. By 1954, most of the study area was cleared of materials and vegetation.
18	668986.33490	1165960.57324	1944	Piles/stacks of unknown materials were evident in the 1944 photographs. Photograph quality and resolution made identification of the materials impossible. By 1954, most of the study area was cleared of materials and vegetation.
19	669077.25325	1165942.18526	1944	Piles/stacks of unknown materials were evident in the 1944 photographs. Photograph quality and resolution made identification of the materials impossible. By 1954, most of the study area was cleared of materials and vegetation.
20	669103.81366	1165934.01282	1944	Piles/stacks of unknown materials were evident in the 1944 photographs. Photograph quality and resolution made identification of the materials impossible. By 1954, most of the study area was cleared of materials and vegetation.
22	669163.06382	1166061.70713	1944	Piles/stacks of unknown materials were evident in the 1944 photographs. Photograph quality and resolution made identification of the materials impossible. By 1954, most of the study area was cleared of materials and vegetation.
23	669154.89139	1166022.88806	1944	Piles/stacks of unknown materials were evident in the 1944 photographs. Photograph quality and resolution made identification of the materials impossible. By 1954, most of the study area was cleared of materials and vegetation.
24	669158.97760	1166012.67252	1944	Piles/stacks of unknown materials were evident in the 1944 photographs. Photograph quality and resolution made identification of the materials impossible. By 1954, most of the study area was cleared of materials and vegetation.
26	669219.24932	1166052.51314	1944	A few trees were cleared from this area as part of the pre-1944 clearing of the site.
27	669144.67584	1165967.72412	1944	Most of the study area was cleared of trees between 1940 and 1944. By 1954, most of the study area was cleared of materials and vegetation.
28	669083.38257	1165903.36619	1944	Most of the study area was cleared of trees between 1940 and 1944. This cleared area was used in 1944 for the storage of unknown materials. By 1954, most of the study area was cleared of materials and vegetation.
29	669058.86526	1165890.08598	1944	Most of the study area was cleared of trees between 1940 and 1944. In 1954, most of the study area was cleared of materials and vegetation.
30	669087.46879	1165868.63333	1944	Piles/stacks of unknown materials were evident in the 1944 photographs. Photograph quality and resolution made identification of the materials impossible. By 1954, most of the study area was cleared of materials and vegetation.

Anomaly #	# Alabama State Plane Coordinates (approximate anomaly center)		Year of Change	Discussion
	X-Coordinate	Y-Coordinate		
31	669076.23169	1165873.74111	1944	Piles/stacks of unknown materials were evident in the 1944 photographs. Photograph quality and resolution made identification of the materials impossible. By 1954, most of the study area was cleared of materials and vegetation.
33	669053.75749	1165876.80577	1944	Piles/stacks of unknown materials were evident in the 1944 photographs. Photograph quality and resolution made identification of the materials impossible. By 1954, most of the study area was cleared of materials and vegetation.
34	669033.32640	1165882.93510	1944	Piles/stacks of unknown materials were evident in the 1944 photographs. Photograph quality and resolution made identification of the materials impossible. By 1954, most of the study area was cleared of materials and vegetation.
35	668975.09780	1165903.36619	1944	Piles/stacks of unknown materials were evident in the 1944 photographs. Photograph quality and resolution made identification of the materials impossible. By 1954, most of the study area was cleared of materials and vegetation.
36	668945.47272	1165852.28846	1944	Piles/stacks of unknown materials were evident in the 1944 photographs. Photograph quality and resolution made identification of the materials impossible. By 1954, most of the study area was cleared of materials and vegetation.
38	669016.98153	1165774.65032	1944	Most of the study area was cleared of trees prior to the acquisition of the 1944 photographs. In 1954, most of the study area was cleared of materials and vegetation.
42	669196.77512	1166210.85409	1954	An unidentified object is evident in the 1954 photographs. The object was removed from the site prior to the acquisition of the 1961 photographs.
60	669248.87440	1166178.16434	1961	Trees were cleared in this area between 1940 and 1944. By 1969, revegetation was underway and by 1982, the area had become reforested.
85	668967.94692	1165944.22837	1994	An unidentified object was present within a fenced area at this location in 1994.

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